REMARKS

This response is in reply to the Office Action dated September 13, 2005. Claims 1, 2, 5-7, 9-12 and 21-25 are pending and under consideration.

Claims 1, 2, 5-7, 9-12 and 21-25 stand rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Chee *et al.* (U.S. Pre-grant Publication 2002/0132221) in view of Collins *et al.* (U.S. Patent 5,681,702). Applicants respectfully traverse the rejection.

In establishing a *prima facie* case of obviousness, the Patent Office must provide "a reason, suggestion, or motivation in the prior art or elsewhere that would have led one of ordinary skill in the art to combine the references," which is the relevant inquiry used to prevent a hindsight-based obviousness analysis. *See Ruiz v. A.B. Chance Co.*, 57 U.S.P.Q.2d 1161, 1167 (Fed. Cir. 2000). The teaching, motivation or suggestion may be implicit from the prior art as a whole, rather than expressly stated in the references. The Federal Circuit has established, however, that "[t]he test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000). Applicants respectfully submit that the motivation alleged by the Patent Office to "optimize specificity" of certain nucleic acid pairs discussed in Chee *et al.* by including into these nucleic acid pairs the orthogonal bases, described in Collins *et al.*, cannot be found expressly or implicitly in the statements of either cited reference.

Chee *et al.* describes how beads can be "decoded" for the presence of an attached bioactive agent by using a decoding binding ligand (DBL) that binds to an identifier binding ligand (IBL) associated with a given bead. The methods of instant Claim 1 and of the claims depending from Claim 1 recite use of a decoding oligonucleotide that comprises an orthogonal nucleobase. The Patent Office acknowledges that Chee *et al.* "does not specifically teach the use of such orthogonal nucleobases in the decoding binding ligand" despite the fact that Chee *et al.* describes examples of othogonal nucleobases, not in the context of IBL-DBLs, but rather as being part of the nucleic acid bioactive agents (*see* last sentence of paragraph [0047] of Chee *et al.*).

The Patent Office alleges that the reference of Collins *et al.* overcomes the deficiencies of Chee *et al.* According to the Patent Office, Collins *et al.* describes the use of orthogonal nucleobases to reduce nonspecific binding and nonspecific hybridization in hybridization assays, although Collins *et al.* does not teach or suggest the use of orthogonal nucleobases in a method of identifying a coded test unit in a plurality of coded test as in

instant Claim 1. The Patent Office nonetheless states that the "ordinary artisan would have been motivated to *optimize specificity* of the DBL-IBL nucleic acid pairs of Chee *et al* with orthogonal nucleobases as used by Collins *et al* because Collins *et al* specifically teaches that these nucleobases can be used to reduce non-specific binding and hybridization in nucleic acid hybridization assays." (emphasis added). Applicants respectfully submit that Chee *et al.* does not support this allegation.

Chee *et al.* indeed teaches those of skill in the art how specificity of the IBL-DBL nucleic acid pairs is achieved. Paragraph [0065] states that the IBL binds its DBL with specificity sufficient to differentiate the DBL from other DBLs or other components or contaminants and to remain bound under decoding conditions. Dissociation constants of IBL-DBLs can be less than about 10^{-7}-10^{-9} M^{-1}. *See* Chee *et al.*, para. [0065]. The Patent Office has not demonstrated why one of skill in the art would be motivated to optimize specificity of the system in Chee *et al.*, that appears to be already highly specific without modifications.

Moreover, Chee *et al.* teaches that the specificity of a complementary nucleic acid IBL-DBL pair is fully achieved by optimizing the length of the probes, stating: "[w]hat is important is that the probes are long enough to be specific, *i.e.*, to distinguish between different IBL-DBL pairs, yet short enough to allow both . . . dissociation, if necessary, . . . and efficient hybridization." *See* Chee *et al.*, para. [0069]. Thus, in order to optimize specificity, one of skill is taught by Chee *et al.* to optimize the length of the probes to be neither too short nor too long. This indicates that optimal specificity can be found with probe length alone, and that increased (as opposed to optimized) specificity might not be desirable in the system described by Chee *et al.*

In paragraph [0100] of Chee *et al.*, cited by the Patent Office to support that the DBL-IBL nucleic acid pairs should be specific, the paragraph states: "the candidate probes and the decoder probes should be of *sufficient length* (and the decoding step run under suitable conditions) *to allow specificity* . . . " (emphasis added). This again indicates to those of skill in the art that optimal specificity can be found with adjusting probe length alone. The Patent Office and Chee *et al.* give no reason for one of skill in the art to look beyond probe length for optimal specificity. Indeed, by using orthogonal nucleobases, one of skill might arrive at probes that are too specific for the methods of Chee *et al.* *See* Chee *et al.*, para. [0069]. Perhaps this is why Chee *et al.*, clearly cognizant of orthogonal nucleobases, does not include orthogonal nucleobases in IBL-DBL probes.

Accordingly, for the reasons explained above, Applicants submit that the instant claims are not obvious over Chee *et al.* in view of Collins *et al.*, and respectfully request that the rejection of Claims 1, 2, 5-7, 9-12 and 21-25 under 35 U.S.C. § 103(a) be withdrawn.

CONCLUSION

Applicants respectfully request that the foregoing remarks be made of record in the file of the above-identified application.

Applicant submits that the claims as presently pending meet all of the criteria for patentability and are in condition for allowance. Early notification to this effect is earnestly solicited.

No fee, other than that for an extension of time, is believed due with this response. However, the Commissioner is authorized to charge any fees under 37 C.F.R. § 1.17, any underpayment of fees, or credit any overpayment Jones Day Deposit Account No. 503013 (order no. 103639-999029) that may be required by this Response.

Respectfully submitted,

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